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THE LATEST WORK ON DYSPEPSIA.

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Science is rapidly replacing empiricism in the treatment of gastric disorders, and every month sees some new procedure for gaining new and more accurate knowledge of the processes which go on in that viscus in health or disease. Not only are new methods advertised, but clinical evidence also accumulates with regard to those which have reached, what we might call, the age of puberty.

The different tests devised by Ewald and others to demonstrate both the motility and digestive power of the stomach have lately attracted a good deal of attention, both in this country and abroad. As salol splits into phenol and salicylic acid only in alkaline or neutral media, and as it is not absorbed until this action has taken place, Ewald and Sievers proposed to make use of the drug as an indicator of the length of time during which food remained in the stomach. Under normal circumstances, they found that salicylic acid could be found in the urine in from three-quarters of an hour to one hour and a quarter. They concluded, however, that to perform the test properly, the salol should only be given when the stomach contents have become markedly acid,—that is, an hour or an hour and a half after meals. It was soon found clinically, however — Kullmann (1),[1] Brunner (2), Decker (3), Leo (4), Pal (5), and Rodczjewski (6)—that although in cases of dilated stomach, especially where the pylorus was much contracted, the salicylic acid did not appear for a considerable time, yet the variations in health were so great as to preclude any useful deductions. More particular statements as to the reactions in health and disease were made by Wolff (12), who found the normal limit to be an hour and a half; and by Häberlin (13), who found the reaction delayed in 87 per cent. of all cancer cases examined by him.

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[1] Figures within parentheses refer to bibliography at end of article.

But others—Huber (7), Bourget (8), Silberstein (9), Ochmen (10)—in working at the subject, found that all traces of the salol disappear from the urine in health in twenty-four to twenty-seven hours, while in cases of enlargement of the stomach or enfeeblement of its walls, forty to sixty-six hours may elapse before the disappearance occurs.

These clinical observations, curiously enough, are in direct antagonism to some experimental work lately chronicled. In the last edition of his great work on Digestion, Ewald (11) mentions that there is a very considerable mass of evidence to show that the contents of the small intestine are acid throughout, and this has been corroborated by Macfadyen in some observations made on the contents of the ileum in man. The acidity is due to acetic and lactic acids; and it can easily be proved that salol is prevented from splitting into carbolic and salicylic acids by a solution of acetic acid.

Klemperer's oil method may just be mentioned to be dismissed, but several well-known observers have recommended the use of iodide of potassium in the same way as that in which Ewald advised the use of salol.

Known generally as Günzberg's test, it has apparently been independently worked out by Sahli (14) in Berne, and by Margan in France. The main idea of the process is, to judge by the length of time which elapses between the ingestion of iodide of potash and its appearance in the saliva. The salt is enclosed in a caoutchouc tube stoppered with fibrin, each writer on the subject having a favourite form. The time taken in digesting the fibrin determines the appearance of the iodide in the saliva, dependent, of course, on the absorptive power of the stomach.

Penzoldt and Faber (15) also used iodide of potash enclosed in gelatine, to test the absorptive power simply. Günzberg's test has recently been investigated by Drs Symons Eccles (16) and Tolcher Eccles (17),—indeed, their investigations are not yet completed, but, as far as they have gone, they consider the test of value. They first examine the activity of *absorption* of the stomach by means of tincture of rhubarb, which, as has been shown by Lauder Brunton, soon appears in the urine, and may be detected in that fluid by its reaction when liquor potassæ is added. Then they use Günzberg's capsule to estimate the *digestive* power. The normal reactive period for the latter they give as seventy-eight minutes. Some practical observations on these methods will also be found noted in some cases of dilated stomach narrated by Dr Cutler (18).

In the hope of getting rid of some of the inconveniences which arise from the use of the stomach-tube, Dr Einhorn, in 1890, introduced a "stomach-bucket," which is, in fact, a silver bucket, hollow, of the shape of the bulb of a probang, and with an open top. This bucket is swallowed and recovered again by means of a silk thread attached to it. It generally contains sufficient of the stomach contents to test for free HCl. A good description of it will be found in the *Dublin Journal* for February last by Dr H. C. Tweedy (19). The advantages claimed for it are, that it is more simple and easy to use than the tube, that it is a great advantage to the general practitioner, and that there is no danger attendant on its use.

It does not appear that this method has any advantages over the tube, for if a tube with a very soft rubber end or nozzle, however stiff the rest of it may be, be used, cases suffering from cancer or ulcer may be examined with ease and without danger.

Dr Soltan Fenwick, writing on this subject, imputes all sorts of dangers to the process of washing out the stomach—convulsions and tetany, syncope and sudden death, perforation and hæmorrhage, injury and poisoning, may in his opinion result from it. The convulsions, he says, it is true, may only be set up by the irritation of the passage of the tube, the existing dilated stomach accounting for the tendency. But he is on surer ground when he speaks of the dangers which may occur in cases of gastric ulcer, if strong expulsive efforts are made by the patient during the passage of the tube. He recommends a more discriminating employment of lavage.

On the other hand, Dr Harvey Attfield (20) reports most excellent results in the treatment of chronic gastric affections by lavage; while Prof. Chas. G. Stockton (21), and H. M. Fisher, M.D. (28), also recommend it.

Dr Einhorn (22) has invented an electrode for use in the stomach of much the same form as his "stomach-bucket," the silk-thread in this case being replaced by a soft wire clothed in india-rubber. The circuit is as usual completed by introducing some water into the stomach, and placing the other electrode on the epigastric region. The author claims to have increased the acidity of the contents by this means, and to have diminished the absorption period for the chemical tests, as Ewald has claimed before him. Wolff (24), however, categorically denies this, observing, however, that the current may be of use in dilating œsophageal strictures (!), and in restoring tone to the walls of the stomach in atonic ectasis; while Dr Stockton (23) speaks enthusiastically of its use in all cases in which the motility of the stomach walls is weakened. Cases with marked gastric catarrh do best with the continuous current, the anode being used within.

Gastric ulcer has, as usual, come in for a considerable amount of discussion. Dreschfeld (25), in the *Medical Chronicle* for last year, gave a full description of our later knowledge, while Henry (26), last February, in a paper on this subject, pointed out that the hyperacidity found in such cases is a relative term. In one class of patients, for instance in chlorotic women, a normal acidity is often hyperacid to the stomach walls. He points out well, too, that injury to the stomach walls, if the acidity present be relatively normal, will not produce an ulcer; but if hydrochloric acid solution, 5 per cent. say, be injected into the viscus, "the loss of substance, instead of rapidly healing, would degenerate into a typical round ulcer."

The latest note on this subject is that of Weir's (27), in the *New International Medical Magazine*, who discusses some cases of laparotomy for perforating round ulcer of the stomach, and gives some history of the operation.

The effect which the presence of albuminoids has on the reactions and properties of free HCl is attracting more attention. Hayem and Winter's (29, 30) method, as published in their book, lately reviewed in this Journal, has provoked considerable criticism.

Bouveret and Magnien (31), and Wagner (32) of St Petersburg, have published notes on the process. The first two named think it cumbrous and little suited for its purpose; the last has a better opinion of it, but thinks it needs further corroboration.

Rosenheim (33) has written fully on the effect albuminoids and amido-acids have on HCl, and took occasion to doubt the results obtained by Salkowski and Kumagawa (34). This led Salkowski (35) to repeat his experiments with amido-acids, and to modify his opinions concerning them. His latest research shows that the presence of amido-acids during peptic digestion only exerts a slight malign influence.

The micro-organisms of the stomach have not been troubled much lately; the only note on the subject is a paper by E. Hirschfeld (36), on the effect of an artificial gastric juice on acetic and lactic fermentation, in which he shows that HCl alone is a more powerful germicide than HCl *plus* pepsine.

The only other thing of note is a pretty little quarrel which has been going on in the pages of *Pflüger's Archiv* between Prof. Wagner on the one hand, and C. Friedheim and H. Leo on the other, about the merits of Leo's calcium carbonate test for HCl.

1. KULLMANN.—*Inaugural Dissertation*, Giessen, 1888.
2. BRUNNER.—*Deutsche Medicinische Wochenschrift*, No. 7, 1889.
3. DECKER.—*Berliner Klin. Wochensch.*, No. 45, 1889.
4. LEO.—*Diagnost. der Krankheiten der Verdauungsorgane*, s. 81.
5. PAL.—*Berliner Klin. Wochensch.*, No. 48, 1889.
6. RODCZJEWSKI.—*Maly's Jahresbericht der Thierchemie*, 1887.
7. HUBER.—*Münchener Med. Wochensch.*, No. 19, 1889.
8. BOURGET.—*Rec. Méd. de la Suisse Romande*, pp. 103–106, 1888.
9. SILBERSTEIN.—*Deutsche Med. Wochensch.*, No. 9, 1891.
10. OCHMEN.—*Inaugural Dissertation*, Giessen, 1891.
11. EWALD.—*Klinik der Verdauungskrankheiten*, vol. i., p. 156 in the 1886 edition. (Page 172 in Dr Saundby's translation of the 1891 edition.)
12. J. WOLFF.—*Zeitschrift für Klin. Med.*, 1883, Bd. vi. s. 112.
13. HÄBERLIN.—*Deutsches Archiv für Klin. Med.*, Bd. xlv. s. 337.

14. Sahli.—*Correspondenz-blatt für Schweitzer Aerzte*, 3, 1891.
15. Penzoldt und Faber.—*Berliner Klin. Wochensch.*, s. 313–315, 1882.
16. Symons Eccles.—*The Practitioner*, April 1892.
17. Tolcher Eccles.—*The Practitioner*, March 1892.
18. Cutler.—*The Boston Medical and Surgical Journal*, Dec. 3, 1891.
19. Tweedy.—*The Dublin Journal of Medical Science*, February 1892, p. 104.
20. Attfield.—*The Practitioner*, February 1892.
21. Stockton.—*The Medical and Surgical Reporter*, January 16, 1892.
22. Einhorn.
23. Stockton. } *The Journal of the American Medical Association*, Feb. 13, 1892.
24. L. Wolff.
25. Dreschfeld.—*The Medical Chronicle*, vol. xiv. pp. 81, 249.
26. Henry.—*The New York Medical Journal*, February 27, 1892.
27. Weir.—*The International Medical Magazine*, vol. i. No. 1.
28. Fisher.—*The Medical and Surgical Reporter*, Nov. 14, 1891.
29. Hayem and Winter.—*Du Chimisme Stomacal*, 1891.
30. Hayem.—*Revue Méd. de la Suisse romande*, xi. 3, 1891.
31. Bouveret et Magnien.—*Lyon Méd.*, xxiii. 31, 32.
32. Wagner.—*Arch. de Physiologie*, xxiii. 3, 1891.
33. Rosenheim—*Centralblatt f. Klin. Med.*, September 1891.
34. Salkowski und Kumagawa.—*Virchow's Archiv*, Bd. cxxii. s. 235.
35. Salkowski.—*Virch. Archiv*, Bd. cxxvii. s. 501.
36. Hirschfeld.—*Arch. f. d. gesammt. Phys.*, xlvii. 9 und 10, s. 510.

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